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NEET Actual Test 2021
Chemistry Solution
CODE: O6

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25 Students Above 95% (NTA SCORE)

2021 JEE MAINS (Feb & March Attempt)

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99.83%

Dev Goti

99.20%

SANYAM C.

98.92%

TUSHAR R.

98.86%

JANAM K.

98.45%

SAHIL K.

98.27%

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95.36%

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95.30%

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#NEET - 2020 RESULTS

GOVT.-MBBS SELECTIONS

665 / 720

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KEM, MUMBAI

MAUNIK MODI

641 / 720

LTMMC, MUMBAI

PAWAN MODI

638 / 720

COOPER, MUMBAI

KALASH S.

630 / 720

GMC, MUMBAI

HEMLATA P.

626 / 720

COOPER, MUMBAI

#NEET - 2020 RESULTS

GOVT.-MBBS SELECTIONS

LUCKY D.
626 / 720
COOPER, MUMBAI

SHUBH D.
615 / 720
IGMC, NAGPUR

SUMAN S.
611 / 720
COOPER, MUMBAI

SHASHANK D.
608 / 720
GMC, MIRAJ

SHRUTI P.
605 / 720
GMC, KOLHAPUR

SUBHJYOTI J.
591 / 720
GMC, SOLAPUR

SHRIRANG S.
585 / 720
GMC, JALGAON

SHUBHAM PAL
584 / 720
GMC, AKOLA

LOKESH JHA
582 / 720
GMC, AMBAJOGAI

ANSHIKA M.
581 / 720
GMC, JALGAON

DRASHTI S.
502 / 720
GMC, MIRAJ

28
Students Above 500 Score

2020 JEE & MHCET

DAKSH P.

IIIIT, JABALPUR

JEE 98.27%

MHCET 99.75%

SEJAL C.

NIT, SURAT

JEE 97.02%

MHCET 99.92%

DIVYASHREE R.

NIT, SURAT

JEE 96.13%

MHCET 99.88%

AYUSH S.

BIT MESRA, RANCHI

JEE 94.54%

SHRUTI S.

NIT, RAIPUR

*PWD CATEGORY

% indicates percentile score

2020 JEE & MHCET

MOHIT SHARMA

VJTI, MUMBAI

MHCET - 99.98%

JEE - 95.33%

VIKAS G.

MHCET 99.31%

D.J. SANGHVI

SHYAM B.

MHCET 99.23%

D.J. SANGHVI

VIKRAM S.

MHCET 99.08%

D.J. SANGHVI

KARAN P.

MHCET 99.07%

WALCHAND

AYUSH J.

MHCET 98.97%

D.J. SANGHVI

DEEP P.

MHCET 98.77%

D.J. SANGHVI

NITESH B.

MHCET 98.49%

D.J. SANGHVI

KHUSHI M.

MHCET 98.41%

D.J. SANGHVI

DEEPTI S.

MHCET 98.09%

D.J. SANGHVI

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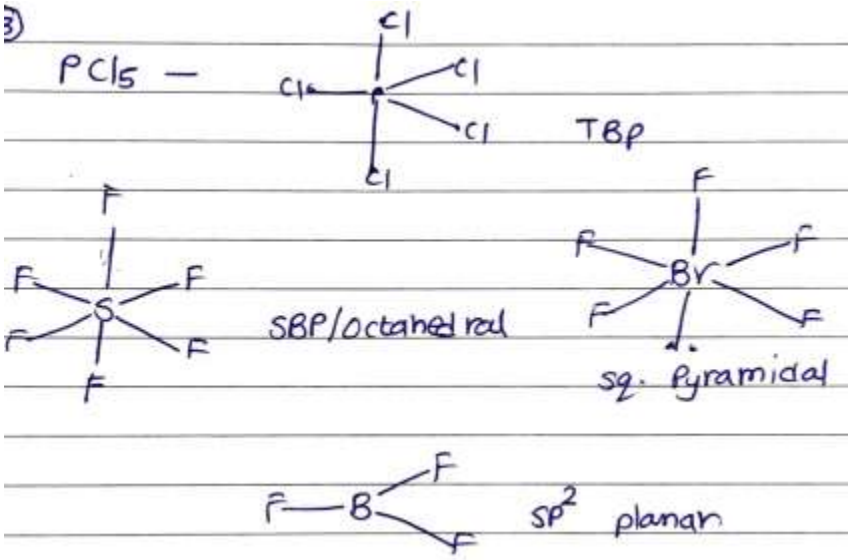
NEET 2021
Chemistry Solution
CODE – O6

Chemistry

51. **(1)** Lanthanoid contraction

52. **(1)** Starch solution –As colloids can show Tyndall effect

53. **(3)**



Use $\frac{1}{2}[V+M-C+A]$

54. **(1)** Dimethylammonium acetate is salt of WA & WB

$pH = 7+\frac{1}{2}[pK_a - pK_b]$

$= 7+\frac{1}{2}[4.77-3.27]$

$= 7.75$

55. **(4)** Blastfurnace maximum temp. 2200K
In the zone of cumbustion temp. is maximum

56. **(4)** Aspirin & Paraacetamol – Non-narotic
Morphine & Heroin - Narotic
Hence both statement I and II are false

57. (3) Teflon is addition polymer Novolac, Dacron & Nylon -6 6 are condensation

58. **(1)** BF_3 $\frac{1}{2}[V+M-C+A] = \frac{1}{2}[3+2] = 3$ sp^2 hybrid
$6e^-$ are present in the outermost shell

59. **(4)** $CrO_2O_3 + 2Al \rightarrow Al_2O_3 + 2Cr$
'Cr' metal is displaced

60. **(3)** low energy β-particles (β^-)

61. **(1)** $\%C = \frac{\text{mass of carbon}}{\text{mass of formula}} \times 100$

$78 = \frac{12}{x} \times 100$

$x = \frac{1200}{78} \approx 15 \quad \therefore CH_3$

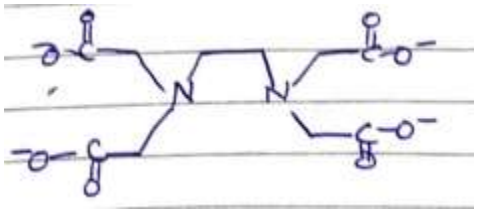
62. **(4)** $\Delta H = -4.2$ kJ $mol^{-1} \Rightarrow$ Exothermic reaction

63. **(2)** $0° \Rightarrow$ eclipsed structure $\Rightarrow$ least stage
$60° \Rightarrow$ staggered (Anti) $\Rightarrow$ most stage

64. **(3)** HF < HCl < HBr < HI
As atomic size ↑es, bond strenegh ↓es
$\therefore$ Acidity increases

65. **(3)** Vit. B_{12} – RBC def. -Anemia

66. **(3)** EDTA is hexadentate four 'O' and two 'N'

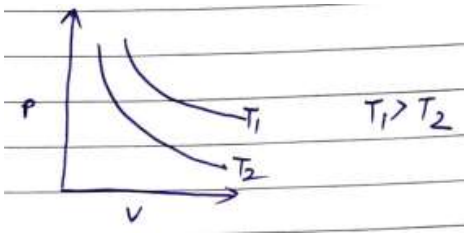


67. **(3)** $V = n\lambda \qquad \therefore \lambda = \frac{v}{r} = \frac{3 \times 10^8}{1368 \times 10^3} = 219.29\text{m} \approx 219.3$

68. **(2)** As, Boyle's Law

$p \propto \frac{1}{V}$ at constant T

Also, as T ↑es vol. ↑es $\therefore$ (2)



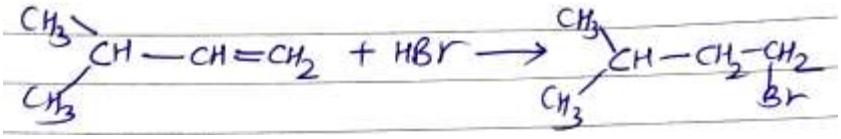
69. **(4)** $\wedge^{o}_{CH_3COOH} = \wedge^{o}_{CH_3COONa} + \wedge^{o}_{HCl} - \wedge^{o}_{NaCl}$ = 91 + 426.16 – 126.45 = 390.71

70. **(2)** Zone Refining-Ultrapurification method

71. **(2)** $CH_3-\overset{\overset{O}{\|}}{C}-CH_3 \xrightarrow{C_2H_5-MgBr} CH_3-\overset{\overset{OH}{|}}{\underset{\underset{C_2H_5}{|}}{C}}-CH_3$

2–Methylbutan–2–ol

72. **(3)** due to Benzyl peroxide $(C_6H_5CO)_2O_2$ peroxide effect is observed
Hence apply Anti-Markonikoff's rule



Free radical intermediate no shift

73. **(3)** Osmotic pressue $\pi \propto C$

$\pi V = nRT$

$\therefore$ more no. of moles $\rightarrow$ more π

(1) $n_{glucose} = \frac{10}{180}$

(2) $n_{urea} = \frac{10}{60}$ $\quad n_{urea} > n_{glu} > n_{suc}$

(3) $n_{sucrose} = \frac{10}{342}$ $\quad \therefore \pi \propto n \quad \therefore \; p_2 > p_1 > p_3$

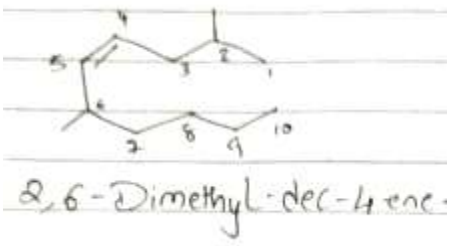
74. **(2)** Metamerism shown by ethers/ketone/ester

$C_4H_{10}O$

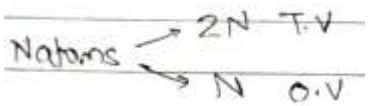
$CH_3 - O - C_3H_7$ $\qquad$ $C_2H_5 - O - C_2H_5$

75. **(4)** Noble gas are gas at room temp. having very low M.Pt & B.Pt

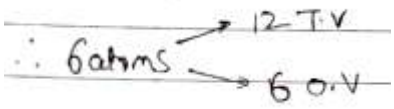
76. **(3)**



77. **(2)**



In HCP we have 6 atoms



78. **(2)** Beryllium has very high charge to size ratio & hence forms covalent compounds

∴ Beryllium chloride is non polar and soluble in organic solvent

79. **(4)** $C_p = C_v + R$

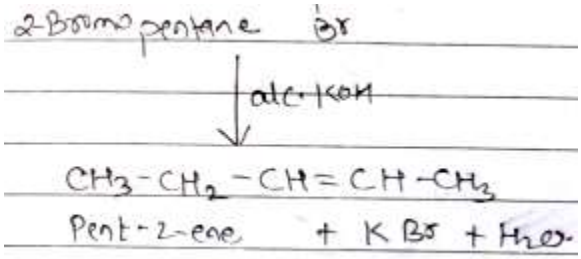
∴ $C_p - C_v = R$

80. **(4)** Bond enthalpy $\propto \frac{1}{\text{Bond length}}$

∵ F is smallest in size it has smallest bond length.

∴ $CH_3\text{-}F > CH_3\text{-}Cl > CH_3Br > CH_3I$

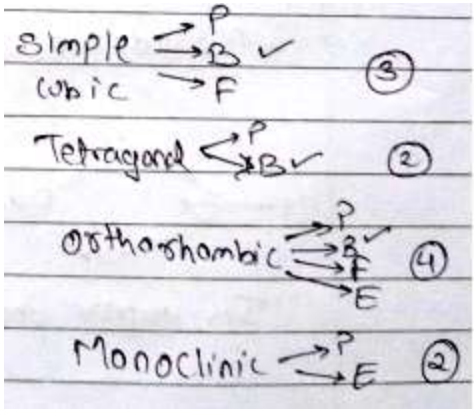
81. **(3)** $CH_3 - CH_2 - CH_3 - CH\,(Br) - CH_3$



Hydrogen atom is eliminated from the β carbon having less no of hydrogen atom

∴ Stytfeff's rule

82. **(2)**



Triclinic → P (1)

Hexagone → P (1)

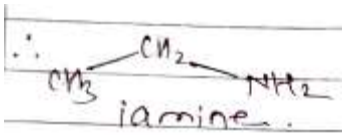
Rhombohedral → P (1)

83. **(1)** Hingsberg's Reagent

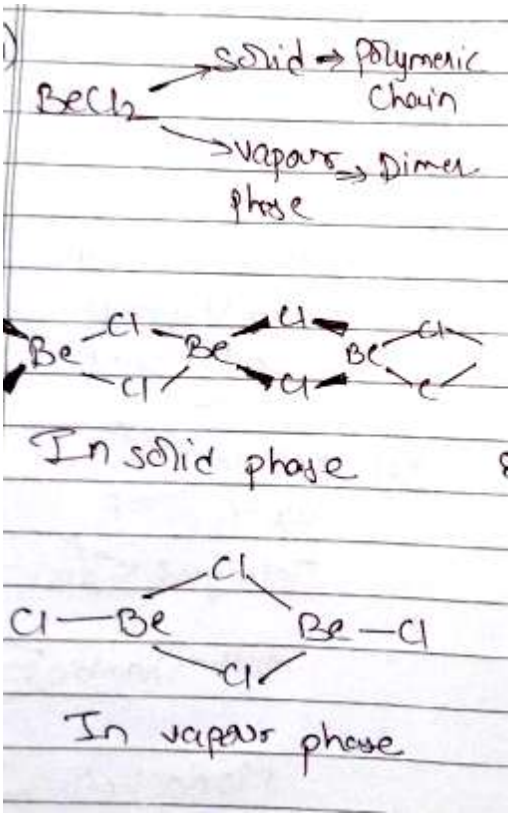
1 amine + BSC → Solid soluble in Alkali

2 amine + BSC → Solid insoluble in Alkali

3 amine + BSC → No Reaction



84. **(3)**



85. **(4)** Most of the trivallent lanthanoid ions are coloured in both solid state and aqueous solution

86. **(1)** (i) Acid trans reacts with marble, $CaCO_3$ of Taj Mahal

$\therefore$ $CaCO_3 + H_2SSO_4 \rightarrow CaSO_4 + H_2O + CO_2$

(ii) Smog. (photo chemical smog)

$$HOCl_{(g)} \xrightarrow{hv} NO_{(g)} + O_{(g)}$$

(iii) Ozone depletion

$$HOCl_{(g)} \xrightarrow{hv} HO + Cl$$

Responsible for ozone epletion

(v) Tropospheric polotion

$$2SO_{2(g)} + O_{2(g)} \rightarrow 2SO_{3(g)}$$

$\therefore$ a-iv; b-iii; c-i; d-ii

87. **(1)** $P_T = P_B + P_o$

$P_B = X_B \cdot P°_B$

$= \frac{3}{5} \times 280 = 168$

$P_o = X_o \, P°_o$

$= \frac{2}{5} \times 420 = 168$

$\therefore \quad P_T = 168 = 168 = 336$ mm of Hg

88. **(1)** Decarboxylation reaction

$$CH_3 - CH_2 - COONa^+ \xrightarrow[\text{Meat}]{NaOH+CaO} CH_3 - CH_3 + Na_2CO_3$$

$\therefore$ CaO

89. **(4)** Acidity order of G-16

Hydrides

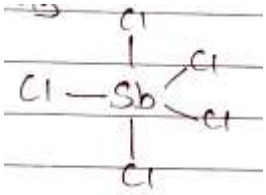
$H_2O < H_2Se + H_2Se < H_2Te$

$\therefore \quad Pka \propto \frac{1}{ka}$

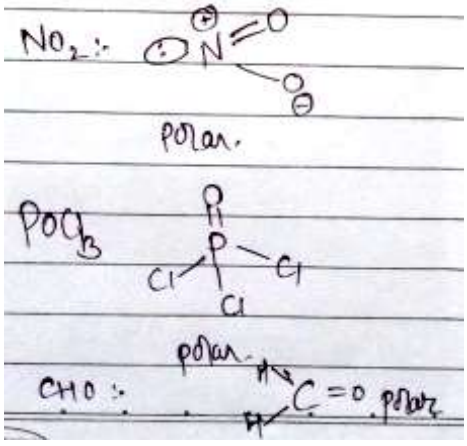
$\therefore$ Pka

$H_2O > H_2S > H_2Se > H_2Te$

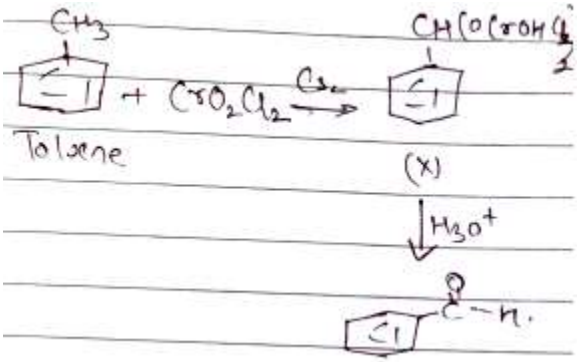
90. **(1)** $SbCl_5$



TBP $\therefore$ non polar



91. **(3)** Etards reaction



92. **(1)** $P_TV_T = n_TRT$

$n_T = n_{H_2} + n_{O_2}$

$= \frac{2}{2} + \frac{4}{32} = 1 + \frac{1}{8} = \frac{9}{8}$

$\therefore \quad P_T = \frac{n_TRT}{V_T} = \frac{9 \times 0.082 \times 273}{8 \times 1}$

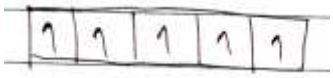
$\therefore \quad P_T = 25.18$

93. **(2)** (a) $[Fe(CN)_6]^{-3}$

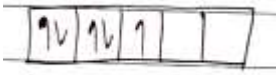
$Fe \Rightarrow +3$

$Fe = 26 = [Ar]4s^2\ 3d^6$

$Fe^{+3} = [Ar]\ 4s^0\ 3d^5$



CN^- is SFL

$\therefore$ 

Nos of unpaired $e^- = 1$

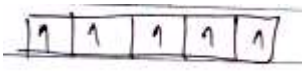
$\therefore \quad \mu = 1.73$ BM

(b) $[Fe(H_2O)_6]^{+3}$

$Fe \Rightarrow +3$

$Fe \Rightarrow 26 = [Ar]4s^2 3d^6$

$Fe^{+3} = [Ar]\ 4s^0\ 3d^5$



$H_2O \Rightarrow$ WFL

$\therefore$ nos unpaired $e^- = 5$

$\therefore \quad \mu = 5.92$ BM

(c) $[Fe(CN)_6]^{-4}$

Fe^{+2}

Fe 26 = $[Ar]4s^2 3d^6$

$Fe^{+2} = [Ar]\ 3d^6 4s^0$

$CN^- \Rightarrow$ FL

$\therefore$ 

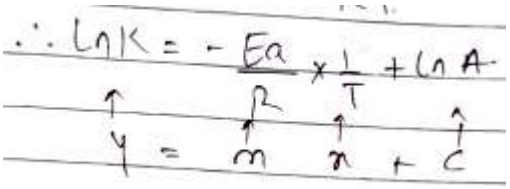
Nos of unpaired $e^- = 0$

$\therefore$ $\mu = 0$

$\therefore$ a-iv; b-I; c-ii; d-iii

94. **(3)** Arrhenius Equation

$$LOK = LnA - \frac{Ea}{RT}$$



$$\text{Slope} = m = -\frac{Ea}{R}$$

$\therefore$ $+5\times10^3 = +\frac{Ea}{8.314}$

$\therefore$ $Ea = 8.314 \times 5 \times 10^3 = 41.57 \times 10^3 J = 41.57\ kJ$

95. **(1)** $K_a = \frac{\alpha^2 C}{1-\alpha}$

$\alpha = \frac{\Lambda}{\Lambda^o}$

$\Lambda° = \lambda^+ + \lambda^-$

$= 350 + 50$

$\Lambda° = 400\ S\ cm^2 mol^{-1}$

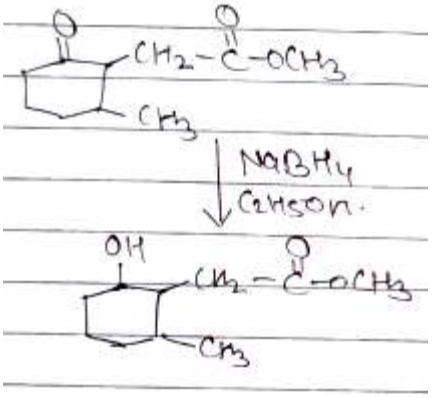
Now $\alpha = \frac{20}{400} = 0.05$

[$\because$ $\alpha = 5\%$ $\quad 1-\alpha \approx 1$]

Now, $Ka = \alpha^2 C = (5 \times 10^{-2})^2 \times 7 \times 10^{-3}$

$= 25 \times 10^{-4} \times 7 \times 10^{-3} = 1.75 \times 10^{-5}\ mol\ L^{-1}$

96. **(2)** $NaBH_4$ can reduce aldehyde, ketones and acid chlorides to alcohols

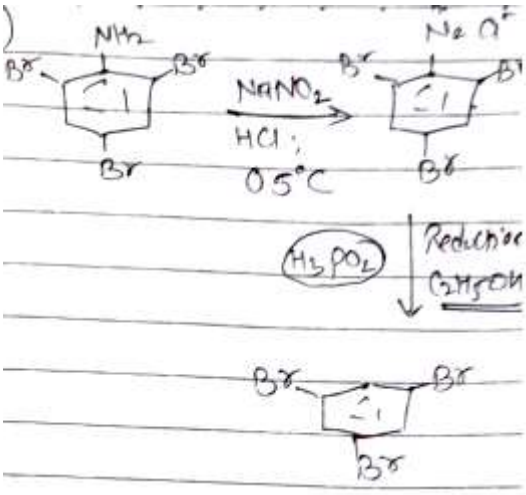


97. **(1)** For isothermal condition $\Delta U = 0$

Ans since the process is irreversible it has non spontaneous and for spontaneous process $\Delta S_{total} > 0$

$\therefore$ $\Delta U = 0$ & $\Delta S_{total} \neq 0$

98. **(4)**

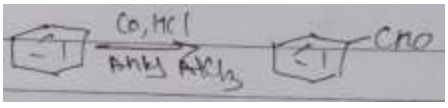


99. **(2)** (1) HVZ reaction

α-Halogenation of C.A.

(i) $R-CH_2-COOH \xrightarrow[P_4X_2]{Red} R-\underset{\underset{X}{|}}{CH}-COOH$

(ii) Gattermann-KOCh reaction

(a) 

(iii) Halo form reaction

(b) $R-\overset{\overset{O}{\|}}{C}-CH_3 \xrightarrow[X_2]{NCOH} R-\overset{\overset{O}{\|}}{C}-\overline{O}Na^+ + CHX_3$ Haloform

(iv) R'-COOH + R-CH_2-OH $\rightarrow R'-\overset{\overset{O}{\|}}{C}-O-R$

a-ii; b-iii; c-iv; d-i

100. **(2)** Iso electronic pairs are the one having same number of e^-

$Fe^{+2} = 24e^-$ $Mn^{+2} = 23e^-$